REMARKS

Withdrawal of the final rejection, entry of the above amendment, and favorable reconsideration of the subject application are respectfully requested for at least the following reasons including the submission of pages 4-5 and 144-145 of the "*Rubber Technology Handbook*" by Werner Hofmann, Hanser/Gardner Publications, Inc. (1989) offered in rebuttal to the newly referenced "Thermoplastics Elastomer" by G. Holden *et al.*, eds.

At the outset, Applicants note that the amendment to claim 1 reintroduces an inadvertently omitted feature from claim 1. As clear from the Appendix to the Amendment filed December 27, 2002, the expression "at ambient temperature" was not intended to be deleted from step b. of claim 1. This feature is, of course, present in claim 3. Therefore, reintroduction of this feature into the claim neither introduces new matter nor raises any new issues requiring further consideration or search.

Applicants withdraw any previous assertions that the materials described in the Stewing reference, DE 771, are "thermoset" resins but submit for the reasons set forth below that this characterization is not necessary or material to the unobvious differences between the materials actually disclosed and contemplated by Stewing and thermoplastic elastomeric materials.

All rejections are under 35 U.S.C. 103(a). Reconsideration and withdrawal of the rejections of: claims 1 and 7 over Stewing in view of the "admitted prior art" and further in view of Danico (US 4,560,083); claims 2 and 13, as above, and further in view of Schultze *et al* (US 6,001,464); claims 3, 6 and 15-17 over Stewing in view of the admitted prior art; claims 4 and 14 over Stewing in view of the admitted prior art and further in view of Schultze *et al*; claims 5 and 11, over Stewing in view of the admitted prior art and further in view of Danico; and claims 8, 12, 18 and 19, over Stewing in view of the admitted prior art, Schultze *et al* and further in view of Danico, are respectfully requested.

Looking first at claims 1 and 7, the Examiner apparently agrees that Stewing does not disclose (1) thermoplastic elastic material and (2) the step of "exposing said members from step (c) to an increased temperature of at most about 20 °C below the melting temperature of the thermoplastic elastomeric material." For these missing elements the rejection relies on the admitted prior art and Danico, respectively.

Applicants respectfully disagree and submit that neither of the features (1) and (2) would have been obvious modifications of the process or product disclosed in the Stewing reference, alone or in combination with the admitted prior art and/or Danico.

Regarding point (1) Applicants disclosure that it was known that thermoplastic elastomers could be used in shrink-on sleeving is relied on as evidence that the thermoplastic in Stewing "is" a thermoplastic elastomer. By "is" it is presumed that the Examiner intended to state "could be." In either case, the reliance on the admitted prior art is simply incorrect.

The facts and evidence of record, including not only the newly relied on Holden *et al*, (hereafter, "Holden") but also the concurrently submitted copy of "*Rubber Technology Handbook*" (hereafter "Handbook") do not support this assumption/assertion.

From both Holden *et al*, and Handbook, it is understood that either a thermoplastic material or a crosslinked thermoplastic material is not a thermoplastic elastomeric material.

Starting with the disclosure of Stewing, it is unmistakable that the materials taught to be useful for shrunk-on sleevings are chemically crosslinked thermoplastics. Referring to the original German text at column 2, lines 44-46 ("Die vernetzung der Einzelteile noch im Spritzguss werrkzeug erfolgt auf peroxidischem/chemischen Wege" which translates to: "The crosslinking of the individual parts still in the injection molding machine takes place via a peroxide/chemical route") the chemical crosslinking does not seem to be in dispute. See the PTO's translation at page 6, lines 1-2 for the corresponding disclosure/translation.

Furthermore, according to the disclosure at column 1, lines 10-12, it is explained that crosslinking occurs in the injection molding machine at elevated temperature and after crosslinking the molded part is cooled (see PTO translation at page 5, lines 17-22).

From these disclosures the practitioner would understand that, at least at the processing temperatures used, the chemical crosslinking is thermostable. In fact, chemical or covalent crosslinking is generally known to be thermoirreversible.

The disclosure of Holden relating to thermoplastic elastomers (TPE) and the presence of physical crosslinking is not inconsistent with the differences between chemically or covalently crosslinked thermoplastics, as in Stewing, and physically crosslinked TPE materials. For example, physical crosslinking is thermo-reversible; the crosslinks disappear upon heating and can be reformed upon cooling. This is contrasted to the thermostable nature of chemical crosslinks.

Accordingly, for this reason alone, it is respectfully submitted that neither the starting thermoplastic material of Stewing or the finished crosslinked products thereof include or suggest TPE materials.

As further evidence that thermoplastic materials are different materials than TPE materials the Examiner is referred to the enclosed pages from the Handbook. As clearly explained, these are different classes of materials each having its own unique set of characteristics. For example, on page 5, see Fig. 1.2. Moreover, from page 4 it is learned that "elastomers ... occupy an intermediate position between the non-crosslinked caoutchouc (plastomer) and the tightly crosslinked ebonite (thermoelast) or duromer" whereas from page 144 it is further explained that "TPEs ... rank between thermoplastics and elastomers, [and] did not feature in the definition of [those] terms ... ." The author provides a discussion of TPEs as polymers which combine the service properties of elastomers with the processing properties of thermoplastics See also section 3.5.1.3 stating that, "elasotomers occupy an intermediate position between plastomers and duromers, since they have a relatively weak crosslinked structure."

In this regard, it is further discussed in section 3.5.1.2 that "the concept of TPE thus describes a state of aggregation of the material which is marked by the thermal lability of the crosslink points, arranged in a statistical configuration between the elastomeric elements. These labile crosslink points are generally of a physical nature; they can, however, also be of a chemical nature, e.g., hydrogen bonds."

Therefore, consistent with the preceding discussion, in contrast to the thermally stable crosslinks required by Stewing, TPEs are characterized by thermally labile or weak crosslinks and, even when chemical in nature, the crosslinks are formed not by covalent bonding but by hydrogen bonding.

Accordingly, for all of the foregoing reasons, it is respectfully submitted that the admitted prior art relating to known uses of thermoplastic elastomeric materials does not provide evidence that the person of ordinary skill in the art would have considered it to have been obvious that the thermoplastic materials of Stewing could or should be thermoplastic elastomeric materials.

Therefore, for this reason alone, withdrawal of the rejection of claims 1 and 7 is respectfully requested.

The additional disclosure of Danico would not have suggested modification of the combination of Stewing and the admitted prior art to include a step of exposing the connecting member and non-sealing members, following stretching, relaxing and appropriate placement, to an increased temperature of at most about 20 °C below the melting temperature of the TPE material.

In this regard, the rebuttal arguments refer, in paragraphs 12 and 13, to applicants' own disclosure as apparently providing motivation for applying the teachings of Danico to the process of Stewing. Such reliance on Applicants' own disclosure is not considered to be appropriate basis for a rejection under 35 U.S.C. 103(a); applicants' own disclosure is not prior art. The fact remains that for the only disclosed application in Stewing, namely, as shrink-on sleeving, heating to cause expansion of the sleeve material would not be a desirable outcome but, in any event is not a necessary result of heating the thermally stable crosslinked sleeves of Stewing.

Moreover, and with all due respect, the assertion in paragraph 13 that Example 1 "discusses that heat treatment causes the body plug to expand" is believed to be a misunderstanding of Applicants' disclosure. The data in the table on page 7 clearly shows that the distance dR2 after relaxation at 170 °C is always less than the distance dR1 between the marks after the initial relaxation step. In both cases, the values for dR1 and dR2 are the distances following relaxation after deformation in the tensile testing machine.

Still further, it is respectfully submitted that the suggestion that claim 18, for example, indicates that the heating step causes expansion of the TPE material is also without any basis or foundation. Rather, in the embodiments of the present invention under consideration, the sealing or connecting member shrinks upon heating (*see, e.g.*, the data in the table on page 7 of the specification as referred to above); retention of any preset expansion (referred to in the specification, page 2, line 1, as "tension set") substantially disappears by heating.

Therefore, when the practitioner aware of Stewing views the disclosure of Danico, the practitioner would immediately recognize the different types and modes of operation of the respective sealing materials involved in each disclosure and would conclude that Danico does not provide any basis or reason for modification of Stewing.

Therefore, even assuming that the practitioner is studying the prior art, with the goal of making a more effective seal, the practitioner would not consider the disclosure of heating in Danico to be relevant.

Again, in this particular case, the reason for heating in Danico needs to be taken into consideration. Danico heats to soften the polymeric material and cause expansion of the blowing or foaming agent to cause expansion. Since the materials of Stewing do not undergo foaming or expansion there would be no reason to subject the Stewing shrink-on sleeve to a heating step nor would the practitioner expect that heating would create a more effective seal.

The suggestion offered in paragraph 13 that "once the sleeving is shrunk on the wire/cable there may be a desire by the artisan to expand the sleeving to fill in the space between the two wires/cables and complete the seal " is not only based on mere conjecture but also presupposes, without supporting evidence, that the practitioner would even expect the Stewing crosslinked thermoplastic material (which does not include a foaming or expansion agent) to soften and expand upon application of heat.

Still further, in Danico, the heating would not be expected to be halted at a temperature of at most about 20 °C below the melting temperature of the polymeric material because at such low temperatures the necessary softening to allow expansion by foaming would not be expected to occur.

For all of the above reasons, it is respectfully submitted that claims 1 and 7 would not have been *prima facie* obvious merely by the disclosures of Stewing, the admitted prior art, and Danico.

Withdrawal of this ground for rejection is, therefore, respectfully requested.

With regard to claims 2 and 13, the additional disclosure of Schultze *et al* does not obviate the deficiencies of the other references as discussed above. Therefore, without conceding that the disclosure of Schultze *et al* would be relevant to the properly construed disclosure of Stewing, since claims 2 and 13 are dependent on claim 1, claims 2 and 13 would not have been *prima facie* obvious for at least the same reasons as discussed above for claims 1 and 7.

Accordingly, withdrawal of the rejection of claims 2 and 13 is respectfully requested.

The rejection of claims 3, 6 and 15-17 as unpatentable over Stewing in view of the admitted prior art should be withdrawn for the reasons discussed above in connection with the rejection of claims 1 and 7.

In summary, in view of the materially different properties of at least chemically crosslinked thermoplastics and thermoplastic elastomers one of ordinary skill in the art would

not have been motivated to form a thermoplastic sealing or connecting component by the steps set forth in claim 3 or to make the particular products of claim 6.

As for the products of claims 15, 16 and 17, Applicants also disagree that the mere knowledge that TPE materials have a broad range of applications would have suggested that the process of Stewing would be useful to make products other than shrink-on sleeves.

Accordingly, reconsideration and withdrawal of the rejection of claims 3, 6 and 15-17 is respectfully requested.

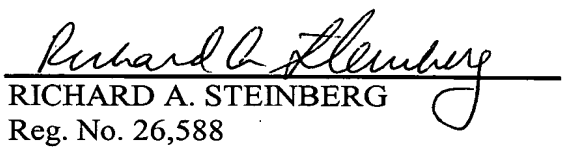
For substantially the same reasons as above, reconsideration and withdrawal of the rejections of claims 4, 14, 5, 11, 8, 12, 18, and 19, is respectfully requested.

Since all rejections have been addressed it is believed that the application is now in condition for allowance and an early notice to that effect is earnestly solicited.

If for any reason any issues remain, the Examiner is encouraged to contact Applicants undersigned representative at the telephone number indicated in order to expedite resolution and allowance.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
PILLSBURY WINTHROP LLP



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